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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,137	04/20/2001	Vincent Delisle	10-336 US	9534
24949	7590	02/10/2004	EXAMINER	
TEITELBAUM & MACLEAN 1187 BANK STREET, SUITE 201 OTTAWA, ON K1S 3X7 CANADA			PAK, SUNG H	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 02/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/838,137

Applicant(s)

DELISLE ET AL.

Examiner

Sung H. Pak

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 11-13, 15 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 7-10, 14, 16-18 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Applicant's amendment filed 6/13/2003 has been entered and the pending claims have been carefully reconsidered by the examiner. However the claims are still unpatentable. Please refer to Remarks for details.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6, 11-13, 15, 19-21 are rejected under 35 U.S.C. 103(a) as being obvious over Delisle et al (US 5,905,824) in view of Haake (US 6,253,011 B1).

The references were cited in the previous office action.

Delisle et al discloses an optical device with all the limitations set forth in the claims, except it does not teach the use of tilting thermal actuator. Specifically, Delisle et al discloses: focusing lens (230); an input waveguides (206) for launching a signal into the integrated wavelength dispersive element (100); means for coupling the signal; and a thermal actuator for providing the movement to the coupling lens (212). The thermal actuator in this case is a simple thermal expansion element (column 5 lines 58-60).

Haake, on the other hand, discloses a bimorph thermally actuated leverage arm for aligning optical beams (Figs. 3A-3B), comprising of two opposite ends (free-end and attached-end, wherein the attached-end serves as the pivot point). It would have been advantageous to use the bimorph thermal actuator of Haake to actuate the lens because such bimorph actuator allows for greater displacement and actuation force as compared to simple thermal expansion material. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Delisle et al device to have bimorph thermal actuator of Haake.

Regarding claims 2-4, Delisle et al and Haake does not disclose the use of additional lens and anti-reflective coating, such elements are commonly used in the art. Additional lens and anti-reflective coatings provide efficient beam coupling with minimal amount of light loss during the coupling process. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use additional lens and anti-reflective coating. It would have been desirable to minimize the light coupling loss.

***Allowable Subject Matter***

Claims 7-10, 14, 16-18, 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: an optical device comprising a supporting substrate, an input planar waveguide, output planar waveguide, an arrayed waveguide grating; and an input coupling structure having an input waveguide; lens for coupling the signal to the input waveguide; means for coupling the signal into the lens; thermally actuated tilt means for actuating the lens, is disclosed and taught by the prior art of record.

However, ***such optical waveguide grating device*** wherein the input waveguide is ***parallel to the input planar waveguide***, and the means for coupling the light signal further comprises a ***reflective element supported by the tilt means***, actuated by the thermally actuated element, has not been taught in any prior art.

***Remarks***

Rejection of claims 1-6, 11-13, 15, 19-21 based on 35 USC 103(a):

The previous office action inadvertently and incorrectly cited that Delisle et al reference (US 5,905,824) *only* qualifies as a 35 USC 102(e) reference, and that the rejection may be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person

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or subject to an obligation of assignment to the same person. This is incorrect, since Delisle et al reference qualifies as a 35 USC 102(a) reference. Therefore, the claim rejection based on 35 USC 103(a) has been revised in this office action and the pending claims remain rejected. Applicant's amendment filed 6/13/2003 does not overcome the substantive claim rejection, and the pending claims remain rejected.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sunagawa (US 5,081,615) discloses an optical device that corrects for a light exit angle when the temperature of the device substrate changes (column 6 lines 52-58).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday - Thursday : 6:30am-5:00pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

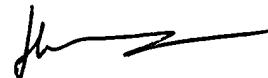
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sung H. Pak  
Examiner  
Art Unit 2874

sp



HEMANG SANGHAVI  
PRIMARY EXAMINER